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James Rush

Introductory Lecture
for 1813 —

also

Delivered in 1814
By
James Rush

I have come before you to deliver an introduction to the lectures of the late Dr Benjamin Rush, on the Institutes and practice of Medicine. In thus addressing you I do not feel as if I were performing a voluntary task, I consider it a duty. By the favour of the author of these lectures I have become the possessor of them, and I should be unworthy of this trust, if I were not, by an endeavour to extend the truths they contain, to aim at some slender imitation of the exertion of him who used so much industry to originate and teach them. The present time has been called with a sentiment of reproach, the age of lectures, In thus adding to the number I feel disposed to question the advantages that are said to result from their mode of instruction, and to ask if greater benefits might not be derived from the more deliberate opportunity which books afford, for receiving knowledge and reflecting upon it, than can take

place in the hasty transition of oral discourse
the business of public lectures is like a thou
sand other practices of the world, into which
abuses have crept by the interests of men
and the oversight of time, their advantage
was real and indispensible to the student
at their institution, they had their origin
with ~~Zeno, Plato and Socrates~~, teachers who
had knowledge to communicate, and
who had not the multiplied means of the
Press to extend that knowledge to other
times and places. Printing has changed the
mode of many arts, and books have now
become the common and sufficient in
structors of the world. [But there is a like=
=ness in the ~~[illegible]~~ affairs of men to those effects
of matter where motion is continued
after the cause that gave rise to it is re=
=moved, and the practice of public le
=tures, which the circumstances of these
early teachers rendered necessary, has
been continued by habit, when the oc
=casion for them no longer exists -

To this remark there are some exceptions. The elements of all knowledge must be addressed to the senses, and among medical studies there are some branches so absolutely elementary that an attempt to teach them in any other way than by exhibiting their objects to the senses, would be ale in vain such branches are Anatomy, the experiments of chemistry, the operations of surgery, and Materia Medica where it is properly or usefully taught, by shewing and not merely describing the sensible qualities of Medicines these subjects will be more easily understood and more impressively conveyed by the demonstrations of a lecturer, another occasion in which lectures may be useful is when they contain knowledge or peculiar opinions which cannot be obtained from any other source — I need not say with what plea I claim your attention. The lectures you will hear contain not only the record of as much experience as has fallen to the lot of any teacher, but they contain original deductions from this experience, and an application of these from

r. you may know

r. the art of -

ciples to medical practice, that the opinions contained in those lectures are original and useful I have only to ~~[illegible]~~ state that the trial and conviction of their truth throughout a whole country has overcome as powerful an opposition as was ever raised against any innovation, and that with the double operation which many truths have of offending and convincing, they have by the same persons been both condemned and practiced. —

I will employ the present time in stating the objects of this course, and pointing out the manner in which these objects may be studied and improved to the greatest advantage —

By the Institutes or Institutions of Medicine is meant the knowledge we have of the phenomena of the human body in health and in disease, and the effects of the medicines when applied to it, reduced to general rules and made preparatory to our entering on the practice of Medicine. By the practice of Medicine is meant the use of these Rules in all the individual cases of disease to which they can be applied {~~The Institutes~~ and a practice of medicine is no more than that division which every science admits into a speculative and practical part.}

The Institutes ~~[illegible]~~

has been subdivided into Physiology, Pathology, Hygiene and Therapeutics each of which I will endeavour to explain —

In a healthy human body there are various actions taking place such as the circulation of the Blood, the Motions of the muscles and nerves, the digestion of food, the secretion of saliva, bile and perspiration, the functions of the mind and many others, have the branch that ~~[illegible]~~ considers healthy the phenomena in all these cases and ~~[illegible]~~ explains is called Physiology —

If the human body were to remain always in the regular exercise of these healthy actions Physiology would include every thing that could be known concerning that body, But these actions are liable to be altered and this alteration constitutes disease — The next step then is to enquire what may prevent this alteration from taking place — The branche which considers ~~[illegible]~~ the means of ~~[illegible]~~ preventing these ~~healthy~~ passages actions is called Hygiene.

But we often find that all endeavours to preserve the healthy actions are fruitless, and disease occurs. ~~It is [illegible] to cure Disease~~

and the parts they particularly effect —

In order to cure it — we must enquire into the causes which have produced this disease, that they may be removed, the part of the body it occurs in, that we may know where to apply the remedy, and the Signs or Symptoms that we may know the danger they indicate, or may choose the remedy for them; the branch that treats all these particulars of the Causes Seats Effects and Signs of diseases is called Pathology —

When Pathology has thus taught us the nature of disease we must enquire in what manner it is to apply the remedy to it. — The branch which teaches the manner and degree in which the agents operate on the body so as to suit them to the circumstances of disease, is called Therapeutics —

The Institutes then consist of these four parts, Physiology or the theory of the healthy actions of the body — Hygeine or the theory of the art for preserving these actions Pathology or the theory of the diseased actions — and Therapeutics or the theory of

v. of the institutes

v. therapeutics or

the operations of medicines for the removal of these diseased actions. —

These various branches give the general rules only on the facts that are included under each. The application of these rules to particular cases, when a disease is to be prevented as in Hygeine, when the causes of diseases are to be prevented and signs distinguished as in Pathology and when medicines are to be chosen from their qualities and applied to particular diseases as in Therapeutics — This application I say constitutes the other branch of medical science called the Practice of Medicine. From this account it must be obvious that these branches rise out of one another, and are necessarily connected. There is nothing in Hygeine that has not a relation to some of the diseased actions as taught by Physiology, there is nothing in the practice of medicine that has not a relation to the diseased actions as taught by Pathology. It is true we have separated them by title, but it is equally true that nature has made

them dependent on each other in reality. Taken all together they are an entire System and as a System they must be taught or we abandon nature, for the sake of our own unmeaning distinctions. —

Then are the objects of the Institutes and Practice of Medicine, and I will presume to point out several things that are necessary for the acquirement and advancement of our knowledge upon them. I suppose I am addressing persons who are desirous to improve a very imperfect Art. Those who will not be contented to receive the talent from their predecessors, and carefully wrap it up for their posterity, I hope their successors will receive it within interest —

I would first ~~beg~~ wish that you ~~are~~ may be convinced the object you are pursuing will be useful. This is not an impertinent request. We do know that there are Medical Hypocrisy. Physicians who practice and who at the same time believe in the entire uncertainty

of the art — that the partiality of other professions, their prejudices from interested views, and the inventions of wit, should suggest this idea, we need not wonder, But the honesty at least of a physician should ~~prevent~~ repress it, if his knowledge could not prevent it from rising — where this idea exists let us never attempt to refute it; since it is held like all reference opinion in obstinacy and pride, and since a physician can have no interest in refuting that opinion which the fear of death will always destroy — —

In the subject I propose to teach you will find that inconvenience which is felt in the acquisition of all knowledge except the science of quantity ~~[illegible]~~, I mean the difficulty of having a system of instruction purely elementary, and resting by demonstrated and successive truths, till the whole has one place of complete perspicuity. The labour of the mind has its waste and its useless remnants, like the labour of the hands in the

[illegible]

ity, and this must consist in the necessary introduction into the subject we are teaching of those things which have not been previously explained ~~[illegible]~~ ~~to us [illegible]~~. We cannot set off from one point of it without leaving behind some part unknown that is connected with what we are laying before us — and we are obliged to remedy the imperfection by going over the circle again. [~~We [illegible]~~ ~~and [illegible]~~ because we find one point necessary to the ~~[illegible]~~] The Institutes and Practice are not a purely elementary study. They imply some acquaintance with subjects to which they merely make an allusion. These subjects are Anatomy, Chemistry, the qualities of medicines and the prominent symptoms of disease — I wish you may have some acquaintance with these, they contain the useful signs that should be known before entering on the present management. — Every science has its alphabet its syllables and its words, to which we must be familiarized before that science can

be a language to us. Anatomy then if I may so speak is the Rom book of Medicine; it is a dead page to our senses in our memory and is comprehensible by every one. It must be known, so it describes those parts of the body at rest which it is the office and the business of Physiology to re=vile in motion. Unfortunately for Physiological inquiry, Anatomy can satisfy very few of its de=mands - since most of the functions of the body whose causes we desire to know are the effect of the action of parts on each other which are beyond the power of the senses -

Some knowledge of Chemistry should also pre=cede our present pursuit - Chemistry exhibits the effects and investigates the causes of the action of the minute particles of matter on each other, and in this view should indeed be the preliminary of all Physical sciences, as it is to the properties of the minute particles of matter that the effects of the world must be ultimately traced. As a part of material creation the human body then comes under the investigations of Chemistry and you know that the opinion has been defended that

v. That to understand

all the functions of the body are the effects of chemical affinity alone. The language we propose does not allow us to decide this absurd question. But as the causes of many of the effects in the human body are mixed, the chemical, we may hope that those causes which state are hidden may yet be brought to bear a part in the simplicity of nature, by being arranged under the same head — I say we may hope, since no human judgement can pronounce the anticipation unattainable. However this question may end it is certain the analysis of animal fluids and solids, Secretion, Respiration and the actions of several medicines requires a knowledge of chemical principles —

Materia Medica should be an other article of general preparatory knowledge. By it I mean an acquaintance with the ~~[illegible]~~ sensible qualities ~~[illegible]~~ effects and ~~[illegible]~~ uses of medicines by an actual display of them. It is to this Street Materia Medica these lectures will refer. The places where they grow, their medical management

and the person who first discovered and used them are subject with which as physicians we have no immediate concern, they come under the view of the Geographer the Botanist and the Biographer. I do not say that these ought not to be known, since I believe that nothing which can be learnt can be useless. I only ask for it in its proper place. Nature offers sufficient enough to our slender intellect let us not second her operation in our pursuit of knowledge, by adding obstructions where enough human means they are unstable. - There are men of business in mental as well as bodily exertion. The modes in each are analogous. Do only what the end of your business requires and let the means be systematic -

I have said that you should have some knowledge of the symptoms of disease from actual observation. There are many ideas which cannot be conveyed by words. we think we describe them when we state their resemblances. We may metaphorically describe a pulse by saying it is a tense or soft pulse or that it is quick or frequent, But

v. a musical instrument.

distinction by direction will not enable us to perceive the differences when the fingers are applied to it — Was a mechanic ever taught his art by direction alone? Would a library of volumes teach the art of playing upon the violin, without exercise? Lessons, Rules and Precepts would indeed shorten our labour when joined with practice. But alone they would never accomplish their design — So in the art of handling there is a peculiar and dextrous management of the fingers, so in the art of knowing the symptoms of diseases there is a management of the senses which is only to be gained by the employment of them. You will find these lectures more intelligible hereafter if you are acquainted with those appearances of disease which are simple ideas that can only be learnt thro' the intellect — those who have had that knowledge will have sufficient opportunity to perfect it in a less space — and in the hospitals. you will have occasion to see these symptoms of disease and those institutions — you will receive from practical and surgical instruction —

shall be any of you be unacquainted with the subjects to which I have referred, you will hear them with their best or the rehearsal from the professors of the University. And I cannot count it too fortunate, that such special aid is thus afforded me in those departments, where I ~~should~~ might be utterly at a loss to instruct —

It will be manifest then that you know these things not, for the earnest acquirement of what I will read. When this is heard and learned you will have only a sight of that which ought to be known. To be informed of what is known in the world is both satisfactory and useful, but at best it is ~~but~~ only a ~~[illegible]~~ secondary ~~operation~~ condition of the mind — The pleasures of learning are delightful, but they are selfish, the pleasures felt in improving an art are those of the target benevolence, for the benefits extend to all futurity — In learning we secure

advantages from those who were be-
fore us, and when we remain contented with
it we live as if the world were to end with
our times - The only way to shew our fel gra
titude to our ancestors, is by aiming to bestow
benefits on our posterity -

We will suppose then that your greatest
ambition is to add to the knowledge we
already possess - For the accomplishment
of this ambition I will mention some of
the modes of study that appear suited to the
purpose -

The first employment, for the improvement
of medicine, is that which has in view every
science, the exercise of an attentive and enligh
tened observation - By an enlightened observa
tion I mean one distinguished from that
common notice of things which sees them
only as individuals, and not as parts
connected into one general system, whose
operations it is the business of science to

understand and to describe - the faculties for this mere notice of things are the senses only and are bestowed by all mankind, But these faculties never accomplished any thing in science - we are often told of the observation of the vulgar and this observation is set against the speculations of the wise. But ~~[illegible]~~ may it not be ~~[illegible]~~ supposed that vulgar observation is oftner defective than learned speculation - whence come the multitude of superstitious in religion? whence come the fallities of the causes of things that are current ~~[illegible]~~ among the ignorant, & whence come the blunders in the mechanic arts, where one man of enlightened observation will rectify what has been practiced and believed even by thousands? These are the faults of vulgar observation - If by observation is meant the mere beholding of things by themselves, then the brutes are our equals who -

Let us suppose you wished to observe the mechanism of a watch, in order to understand the causes and effects of its motion

know a tree from a stone. The observation that has improved the world is of a different nature. ~~[illegible]~~ - Observation is considered as a simple act of the senses, but it is more complicated, Besides our perception et emotions our memory, apprehension and judgement, ~~will illustrate this by the [illegible] principle of [illegible]~~. - You first perceive the barrell or that part which contains the spring, and note all its appearances, retaining these in the memory, and proceeding to the fusee or part on which the chain is set, you note its appearances. From an association of the ideas furnished by each of these parts, and a comparison of their relations, you conclude that one cannot move without impelling the other in a manner corresponding to the connection between them. In this manner

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by a succession act of perception memory association and judgement, you pass over the whole structure, and obtain at one view a knowledge of the entire connection of the machine - now this has been attained by what is call'd merely an act of observation But it must be manifest to you that the process of the mind is the same as that employed for the attainment of the sciences as we observe the watch, we must observe nature if we wish to discover her causes or modes of operating. There is but this difference between them, the observation of the watch is conducted on one insulated spot, in a short time, without the interference of other mechanisms to mislead or distract us - the observation of nature, is conducted in different places under different circumstances, at distant periods of time, and with the interposing of many irrelevant

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circumstances to weaken our attention. The mode is the same in each case, only the observation of nature requires the greater act of memory, the stronger act of association, and a clearer judgement. An effective observation consists not only in an accurate attention to the things that pass before us, but also in an attention to many things at the same time, or if that be impracticable thro' the limitation of our minds, to a number of things in such rapid succession, that the whole view appears as instantaneous, as if it were done at one time. It is by this collective view that we gain a knowledge of the operations of nature, or in other words, of the causes of things. If we see the parts of a complicated machine in separation or slow succession, it is impossible to comprehend it, But if it be arranged before

[illegible]

us so that all its parts are calculated at once it is easily understood. The same is true of the works of nature which are the operations of a great and complicated machine, By studying them separately, they may be known as individuals, but we can not tell how they effect each other, It is by bringing the parts together by a comprehensive observation, that we are able to discover their causes. — This idea will be further elucidated by what I would observe with respence. The Deity by the possession of infinite sensed perceives every thing. Sound, motion and form cannot be so infinitely diminish'd that his senses by a parallell infinity can not overtake them. But knowledge from these sources alone, would not be omnipotence, there is in him a power to see all things at once, I would call

[illegible]

this attribute the greatest if it did not 22
rank among perfections, since in man
the ~~faint~~ earthly image of the Deity it is the strongest
characteristic of mental distinction. It is perhaps
one of the
secrets of the genius of Shakespear and Bacon,
they never saw things by themselves — this attribute
of affinity is the fountain of his omnipotence, by
placing at one view before him all the operations
of creation; and a man in a humble likeness, gains
a knowledge and consequently a power ~~and~~ in
the little spheres he studies, by an observation that
comes into one view, a number of the parts
of which that sphere is composed. — The labours
of genius are a constant endeavour to approach
towards ~~[illegible]~~ ~~[illegible]~~ the perfec
tion of this aggregating faculty. It will how
ever never be reached by man from the ab:
solute necessity he is under of considering
things in succession. One use of his memory

is as a substitute for this faculty. It 23
brings before his eye while viewing one
object those he has seen before, and thus
gives the faculty of ~~seeing~~ beholding many
things at once, which in the Deity is a
single act of perception - The more nu:
merous the objects are that are thus brought
up by the memory and the more intimately
they are related the ~~[illegible]~~ greater will
be the power ~~[illegible]~~ to discover the opera
tions and causes of nature -
It is observation conducted on these
principles which must improve our art.
First to see precisely all the individuals
that come before us, and secondly to cal
=tivate the habit of collecting into one
view the greatest number of these in
dividuals.

If a number of [illegible] at the same time

to derive benefit from their observations we must be diligent in the use of it. to stand on a note only the things that fly by, such have our knowledge to a few and accidental objects. The metaphor applied to the means of acquiring science is walks its seats are only those places where a long line of illustrious travellers has deposited its collections. The common consent of mankind makes gain in all its departments the result of an steady and industrious pursuit of it, Shall the indian wash whole fields of clay and find one little diamond point? and shall not they who desire the treasures of science, give from their higher importance, a greater degree of attention and industry for their acquirement. Shall they above every that which

V. A case of illustration will shew that it is little more than the philosophic observation, considered under the last head. —

is the price of every thing worth possessing — Labour. — That mind will be a meagre one that is fed like the animals, fix'd to the rock which is barely secure their nourishment, by the flowing of the tide upon them, the mind that would be active and vigorous must be nourished like the Eagle, by a restless and a searching search. —

The proper employment of our reasoning faculty — is an other mean for our advancement in the study and improvement of medicine. From what I have said on the last head of observation you must perceive that it includes the art of reasoning. Reasoning consists in marshaling our thoughts and ~~the~~ deciding upon their agreement or difference. ~~[illegible]~~

V.

That it was a fact established by observation that the symptoms of inflammatory fever were a tense pulse a dry skin, heat, a diminution of many secretions and occasionally an effusion of fluid on the surface of the skin in the form of hydrodermia — It was known too that inflammatory action in the bloodvessels sometimes produced fluids below the skin as in burns and scalds — fever. — It was further observed that this inflammatory fever was relieved by depleting remedies — Now it was also observed that many anasarcous patients had the same tense pulse, dry skin, heat, and diminution of many secretions, it was further seen that there was an extensive effusion of fluids below the skin of the limbs, and on the surface of the

Let us suppose that reasoning led
to the use of the sliding pendulum in Arabic.
[illegible] Fact [illegible] [illegible] requi
site [illegible] [illegible] [illegible] [illegible] many
red [illegible] [illegible] [illegible] of Arabic co
pies [illegible] [illegible] [illegible] [illegible] bulbs
a [illegible] [illegible] [illegible] [illegible] many
sections. It may [illegible] [illegible] [illegible] a
solution of [illegible] [illegible] [illegible] of some
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] that many
[illegible] [illegible] [illegible] terminated in the
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
and there [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] of water
into the [illegible] [illegible] and on internal
[illegible] [illegible] [illegible] [illegible] [illegible] may be
[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]
[illegible]. Now all these phenomena of
Arabsy being observed, they were awkard

~~[illegible]~~ causes of the hydro-
constituting ~~in~~ these causes, yet I might
so create a kind of internal respiration.

with the phenomena of inflammatory fever. And the evidence being so extensive, it was presumed that the agreement was universal, and that the state of the system would also resemble each other in the effects produced by one remedy upon them. The depletion therefore which had been found beneficial in inflammatory fever, was used for dropsy, and the result was a cure of the disease. Now this conclusion was an act of reasoning, but you see how much of the process, by which the truth was attained was a mere observation of the visible phenomena of the cases. The reasoning here illustrated is by analogy, or from a resemblance in most particulars of two objects inferring a resemblance in all, and it is the only ~~[illegible]~~ mode of reasoning of the greatest part we have for the acquisition of medical truth or opinion. Indeed I might extend it further

v. Perhaps it ought not to be said that
Theories should be universally rejected —

and say that it is the only mode where the senses do not serve us, of obtaining knowledge of nature whether physical or moral. The mathematical proofs is called reasoning. but any one who will analyze it will find that it is only a connected series of observations -

There is an other exercise of the mind which is assigned under the head of reasoning but which does not belong to order of that reasoning which is to be employed for the attainment of truth. I mean the theorizing that forms the greatest part of all medical inquiry. Theories are generally founded on suppositions or hypotheses. From these premises the reasoning is mostly consistent and correct, and perhaps the best examples of acute and logical thought are to be found in the theories that have amused the world. The error is only in the outset. ~~I will not say that it is, at the outset~~ they may be true, and after observation has sometimes proved them to be so. But as truth

is uniform, and our multiform. The chance that they may be erroneous is to the chance they may be true, in the same proportion that the innumerable forms of error on a subject bear to its single form of truth. Theories have crowded the pages of medicine, because there is in the human body so much that we want to know and so little that we can know. We feel ashamed to meet the world with the confession of ignorance since this unfortunately is considered as great a sin in science, as the commission of any vice against morality. In both cases we attempt to obviate reproach in the same way. In morality we seek to hide our shame by the artifices of deceit, and in science by the cunning lye of theory. But if we seek for any other remedy for ignorance than time and the industrious exercise of observation and reasoning we deceive ourselves and stop the progress of truth. There are some things in the human body which can never be known, whilst

our senses, the only testimony of truth, remain in their present state. We shall never know how a muscle contracts how a lymphatic absorbs, how the nerves move, tell we see them we never conjecture or dispute about the form of the inhabitants of the moon, then why should we say so much about the modus operandi of certain medicines. Both objects are equally beyond the power of our senses, the one by distance the other by diminution. If one tenth of the time that has been wasted in theory had been employed in inventing greater aids to the senses than we at present possess the science of the world would have been much ~~abroad~~ extended beyond its present ~~station~~ limits. Think how much the Telescope has advanced the knowledge of objects that were more distant and unknown and we can calculate how much the microscope may inform us of those that are minute and unknown Let us then not hesitate to confess that we

are ignorant of those things which with our present powers we ~~[illegible]~~ carnal know. Let us exercise our minds on those things we are capable of ascertaining, and they are ample enough for the longest life of labour. Let us seek to improve our senses for the investigation of what we do not know and by ceasing to conjecture where we are not certain let us try if we cannot reverse that rule which makes the shame ~~of error~~ ignorance greater than the shame of ~~error~~ error.

You will perceive ~~[illegible]~~ some advantage in the study of Medicine by the cultivation of other branches of knowledge, which at first sight do not seem to be connected with it. There are remote influences in sciences as well as in the physical world, and among these is the influence that the study of one branch has on all others. I once met with a sentiment in a distinguished writer and advocate for literature, that from

The profound general reasoning of Hume.—

the extensive and secret operation of moral causes, he would not say a Chinese Mandarin was not a better man because Milton had written his Paradise Lost. The sentiment is extravagant, but it contains as much truth as the opinion does, some foundation, and the analogy of the extensive physical effects that often arise from apparently small causes warns us to be cautious in limiting its truth with a similar view to the indirect influences of studies upon our minds, I believe that other things being equal he will be a better physician who has received the mental benefit of studying ~~in one particular with~~ Smith, Neal the of Mr: S., ~~Hampstead~~ ~~[illegible]~~ tions and Shakespeare plays. I know quite men ~~[illegible]~~ this is not a popular doctrine. Physicians are often chary because they are nothing but physicians, Strange! ~~that~~ we should be allowed to join with our profession the cold and vulgar art of making our fortunes and not the rare and noble art of making our minds

These studies are beneficial in two ways. —
First. They furnish facts that may find a place in the comprehensive range which medical science takes. Consult the observations of the best medical authors and you will find they have been drawn from all departments of human knowledge. Custom has connected the studies of Botany and Natural history with the education of a Physician, when in reality they have not more relation to it, than many other branches that never enter into College instruction. Yet these they both throw light by analogy on human Physiology. But the same thing is done by the higher departments of Poetry which paint the philosophy of character, and by the civil and political histories of the world. ~~They~~ which describe the happiness and turbulence of men they both instruct us in the healthy and disordered actions of his mind and passions. If medical education were to receive its full complement of aid from other knowledge, no one

branch would be omitted. But the term of life and the limitation of intellect must prevent this. To a certain extent however it is practicable. We know that all science has two departments one consisting of the general principles, and the other the details. To learn the details is the business of a life, and must be confined to the professional man. But the general principles are more easily obtained and may form part of the knowledge of every industrious student. It is a happy adaption of the nature of knowledge to our finite capacities, that as our necessities confine us to the detail of one pursuit in science, we have yet an opportunity to gain an acquaintance with others thro' their general principles. I therefore say study your own profession thoroughly and in detail and make yourself acquainted with the general principles of as many others, as your situation will allow. But Secondly an advantage will not only be received in the facts furnished by other branches

wants time only to make it –

"For intellect is but the mirror of nature, and knowledge, but our mode of holding the reflexion – therefore we make mind by knowledge for the

of Sciences. A greater benefit will be derived from the improvement your minds will receive in the pursuit of them. The process of the mind in the acquisition of all kinds of knowledge is the same. The same instruments Perception, Memory, Apprehension and judgment are employed in all sciences. By the employment of these instruments in one we acquire a more dextrous management of them for others. Tis true some branches are more easily attained than others; and we sometimes observe this limitation of intellect which is called a peculiarity of talent. We consider this limitation rather as a feebleness of the mental powers which have a dominion over only a part of nature. A real master mind is capable of every thing. Since then a finished intellect is fit for enterprise in all departments. We should try by a kind of inverse operation to produce a finished intellect by the cultivation, as far as is practicable of every department. To apply this principle we

v. The successive steps of knowledge are made upon a multiplying ratio -

to the purposes of medicine. I do not see that the mathematical studies of the properties and relations of magnitude and number, have any direct application to the treatment of a disease. But I am convinced that the habit of exactness of precise definition, of perspicuous comparison, and of strict connection and conclusion, is applied with the greatest advantage to the investigation of medical truth. Again I do not know that there is to be found in Thomson's Seasons a line that would serve a medical purpose further than a motto. But I know that the nicety and accuracy of observation of all the objects of nature which are embraced by the subject, may create in us a like power to observe the phenomena of nature as exhibited in the immediate object of medical science. The cultivation of other knowledge besides your proper profession should be your aim then if you have placed high your hopes of medical distinction. The more

of it is gained the more is the capacity of extending it increased. and tho' a survey of what you may thus accomplish, may discover some that may remain useless. it has rendered its benefit in the mental exercise by which it was obtained. you may deplore your time as lost because the fruit of it is not immediately produced, but recollect it is like the loss in the fallow of a summer field, which renders succeeding cultivation more easy and successful. -

There is an evil which marks the investigation of Medical Science against which we must particularly guard. I mean Prejudice - This is a mental deception and is of two kinds the prejudice of words and judgment. Every philosopher complains of the obstruction that words, or if the evil be not specified to them, the abuse of words offers to the inquiring after truth. - words are an injury and

V. in our enquiring after truth by -

V. The proposition is then measured by their

First by being used Metaphorically, then by leading to a belief that two things are entirely alike, which resemble each other perhaps in but one particular. Secondly by giving rise to abstraction by which our attention is diverted from things and fixed on sounds. Thirdly by the attempt which is made to define a thing by a few words. whereas, the only just and true definition of a thing is the entire perception of it. and Fourthly by our being satisfied with the substitution of a word for an idea. This last is the most copious source of the deception of words in Medicine. I will give an example of it. We say we do not restore a drowned person because there is no excitability for our remedies to act upon. This satisfies our enquiries, but excitability is here only a word, it is not the sign of any thing our senses know, which is the meaning of an idea, so we do not restore him because there is not that thing in him by which he may be restored ~~[illegible]~~ which is only saying ~~[illegible]~~ we do not restore him because we cannot restore him. So that the whole is reduced

to what. Philosophers should only say, we cannot restore sight, for this is a truth. — These are the deceptions of language that we must avoid if we wish to know things as they are, which is the aim of true Philosophy. [~~[illegible]~~ By these we are often made in sensible to the differences of things that words have joined, and to the resemblance of things that words have separated. Many instances are not wanting in Science, in which our ideas have been misled by words that have been given by the rule of contrariety, as the ancients gave the names to the Mysterious "Parcæ quia non Parcebant"

If man were only to observe and think, and could he at the same time receive the knowledge of others without the communication of language or what would be the same, could he live so long as to acquire by his single observation and thinking what he demands of others, for the want of time,

But =

There is no calculating how much sooner he would arrive at the point of knowledge aimed at by man, than would be reached by any number of men magnifying by the imperfect and fallacious aid of words. Rr Labs I may be considered as fanciful, and I attend to only as a fancy when I say that the brutes on this principle do perhaps more accurate knowledge of the objects that come before their senses by observing them themselves. than if the same knowledge had been derived by a language from their species. - May I ask two if some of those acute perceptions and conclusions which we call their instincts are not the effect of the dumb study they make of the objects that concern them. - A sect of ancient Philosophers imposed the keeping a term of silence on their novices. an institution worthy the wisdom of Pythagoras. which limiting they employment to observing and recording, gave their juster notions of the realities of things.

But = A greater evil is done to science, by the prejudice of judgment. By prejudice in judgment

follows

v. ~~Esse~~ it with all our pride —

I do not mean belief without ~~[illegible]~~ ~~[illegible]~~ sufficient argument. since this is a relative and variable thing. as no one ever believed a thing without satisfactory reason to himself. By prejudice I mean opinion formed without appropriate ~~[illegible]~~ argument. Thus if I reject an erroneous opinion because it has impaired mine ~~[illegible]~~ It is using an inappropriate argument. since my feeling the injury has no more connection with his opinion than it has with the language he speaks. we are accustomed into supposing them related by both of them attaching to the same word. - ~~[illegible]~~ - We are bound not only to guard against the prejudices we have from envy or dislike towards others. But we must carefully to avoid a larger class that results from a love of ourselves. When we have adopted an opinion we consider it as part of ourselves and we ~~[illegible]~~ ~~[illegible]~~

v. this made of ~~[illegible]~~ reasoning

This partiality for our opinion is a prejudice - It is an unauthorized argument, it is liking our opinion because we like ourselves. But however false every ~~it~~ may be, I think I may ~~[illegible]~~ assert that it has been used as the support of more opinions in the world than any other argument, even the testimony of a Sense. This self-love should be no argument to a Philosopher. He should be ready to give up not only his opinions like the great Master of Wisdom Socrates, set the example that he should resign his life also for the sake of Truth. Let us consider Truth a Tyrant and give her all she demands. - It is a tolerable characteristic of Feudal times that a Scottish Chieftain once ordered a retainer who had offended him to destroy himself. In the anxiety of his situation his wife addressed him "Go away John and hang yourself, and do not displease the Laird. In like manner a Philosopher should consider

himself the object Claimant of Truth, and should be ready to lay down even a opinion, which is often valued more than life, but he displeasure Lev. — The world as well as individuals has suffered from the association of certain things which have no necessary connection. The Politician has his honesty improperly associated with his party. Religious creed is associated with morality and professional opinion with skill. And it is because these three great points of pride in man his honesty his morality and his skill, are supposed to be attacked in the question of his mere opinions, that he rests with such eagerness and obstinacy every slight upon them. But it is time for philosophy to dissolve all connections that impede the progress of truth. — —

In viewing the lectures I will read to you, I hope we may be governed by the principles I am inculcating. I believe they contain much

v. Those lectures used to address his pupils —

truth. I know they contain much speculation
For the truth I wish you to consider me the per
severing advocate. For the speculations I give no apology
But that they are on points of great difficulty to
human intellect, and that they are the work
of a fallible man. You know the words in which
the author of [redacted]. "Observe
Read and think for yourselves" – If there in
choosing your profession you have determined, be
sides aiming at your individual benefit, to
advance the cause of Science. Come let us use
our feelings and judgement on these letters
together, and with one pen [redacted]
let us of the sum proper blot out whole
pages of his honest error. – –

James Rush.

Philadelphia
August 1813.

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